

ABSTRACT

The invention pertains to a method for deep-rolling radii or fillets (2) at the transition between the bearing journals (3) and the adjacent flange (4) of a bearing point of a crankshaft (1) with the aid of deep-rolling cylinders. The deep-rolling cylinders are pressed into the radius or the fillet (2) of the transition with a deep-rolling force until a predetermined roll-down depth (10) is reached while the crankshaft (1) is turned. The transition is initially deep-rolled with a first deep-rolling cylinder, the radius (6) of which has an osculating ratio between 1 and 0.85 referred to the radius of the transition or the fillet (2), namely with a first deep-rolling force that produces a maximum internal compressive stress (7) in the transition at a depth between 1 and 2 mm below the deep-rolled surface (8). The same transition is subsequently rerolled with a second deep-rolling cylinder that has a smaller radius (14) than the first deep-rolling cylinder (5), the magnitude of which is chosen such that the second deep-rolling cylinder causes a further plastic deformation (11) on the deep-rolled surface (8) of the transition in addition to the plastic deformation achieved with the first deep-rolling cylinder.

The figure is designated for the abstract.